Puget Sound Steelhead Recovery Team
January 26, 2016 Meeting Summary

Decisions and Actions from Meeting

Decision
Approved the December 17, 2015 meeting summary with edits.
Gave direction to create recovery goals at the DPS and MPG levels for spatial structure and diversity, and goals at the DIP level for abundance and productivity.

Action	Assignment
1. Revise the approach for developing recovery goals.	Joe Anderson, Ken Currens, Elizabeth Babcock
2. Read through the updated draft Recovery Plan in preparation for the March meeting.	Team members

Welcome, Announcements, and Old Business – Bob Wheeler, facilitator of the Puget Sound Steelhead Recovery Team ("Team"), welcomed the Team and led introductions (*please see end for a list of participants*). Elizabeth Babcock, lead from the National Marine Fisheries Service (NMFS), noted that she is currently also the acting branch chief for the North Puget Sound Branch Office, at least for a six-month period starting January 1, 2016. While that branch is focused on regulatory actions, she hopes to flex some resources to help with the steelhead recovery planning effort. She also encouraged the branch staff to attend a Recovery Team meeting to learn more about NMFS' recovery planning efforts, so Mike Lisitza from the branch attended this meeting.

There were no suggested changes to the draft agenda. The focus of this meeting was to show the latest version of the life cycle model and begin to test it out, as watershed biologists will do.

Announcements

- NMFS noted that their species status reviews will likely be sent to headquarters by the end of February, and hope to have more specific updates for the Team at the March meeting. Once the reviews are sent out in the Federal Register, NMFS can share with the Team.
- NMFS is also working on their response to the parties that filed the 60-day notice of intent to sue. Once the response is finalized NMFS can share with the Team.
- The Puget Sound Partnership (PSP) noted that the Salmon Recovery Council (SRC) will soon update their biennial workplan, which includes work for Chinook and steelhead. Jeanette Dorner can share more information at a later Team meeting on the workplan, which will be discussed at the January 28th SRC meeting.

December 17, 2015 Draft Meeting Summary – The Team reviewed the draft meeting summary and a few edits were suggested. With those edits, the Team accepted the version as final.

Life Cycle Model – The Washington Department of Fish & Wildlife (WDFW) is leading the effort to finalize a life cycle model that is usable for the steelhead recovery planning effort. Joe Anderson, WDFW, shared with the Team some background and updates about the model development:

- The model has two stages: freshwater and marine survival in saltwater. That means that the model tracks both spawners and smolts.
- A Beverton-Holt curve is used to assume maximum number of smolts per spawners and the total smolt production.
- The marine survival component is density-independent, and has two phases: the initial phase, which is generally about two weeks in the Puget Sound, and then the next 1-3 years in the ocean.
- Harvest is included in the model, pulling from the population of returning adults and removing a percentage before the spawning assumptions are applied.
- Repeat spawning (iteroparity) is also modeled, which is described as a proportion of a spawning cohort to return the following year. Currently, kelts taken through harvest are not captured in the model but that concept could be added to the assumptions about returning spawners. While there is some information about iteroparity in the work from the Puget Sound Steelhead Technical Recovery Team (TRT), the factors that control iteroparity are generally still unknown.
- The modelers also created a demography table tracks the number of fish in different life stages through time, which is geared towards abundance and productivity.
- Age data from scales is generally weak around the Puget Sound, though a few populations have a lot of good data (Skagit and Snow Creek). The modelers used as much of that information as they could, and hope that that will help make decisions about other populations.
- The modelers' goal is to create an accessible model for a wide range of users around the Sound. To achieve that, the model is in a website format with adjustable inputs. For several of those inputs, the user adjusts the mean input and also a standard deviation input, both of which affect the results. The Team noted that this form of a model is much more accessible and user-friendly than other alternatives available.
- The Team walked through a full model run with one watershed in mind. Initial lessons learned included:
    - The model will time out on the user if nothing has been adjusted in over five minutes. If that poses a problem for users, the modelers can change that setting.
    - The River System pull-down menu is based on Demographically Independent Populations (DIPs), but choosing one DIP does not load any geographically-specific information into the rest of the parameters below.
    - The relationship between the habitat loss and habitat restoration inputs is complex, so they will not simply cancel each other out. However, the modelers are eager to see how this works with more model runs across the Sound.
    - Capturing unreported harvest was identified as an important dataset for the model, though the modelers and Team may need more discussion on this in the future.
    - The model is intended to get specific information for each DIP, though it cannot further compartmentalize DIPs into specific sections.
    - Due to the demographic table, the model uses spawner abundance numbers from the original input only for the first seven years. Starting in year eight, the model has a complete cohort from the first spawning event in year one, so from then on the model ignores the original input and generates adults based on the other parameters.
    - Setting the late marine survival input really low shows the effect early in the 50- or 100-year model output, and then continues a slow degradation over the latter portion.

- A Team member suggested making an FAQ document for when the model is released publically for use by the watersheds.

Recovery Goals – Joe Anderson reported back from a small group discussion prior to the Team meeting about a potential approach for developing recovery goals. The small group had identified several sections as part of the process to develop recovery goals, and comments from the Team included:

- The viability criteria established by the TRT must be achieved through the recovery goals, but the Team also noted the importance of achieving cultural goals within the broad-sense goals, summarized as "healthy and harvestable".
- The viability criteria are not DIP-specific, but that will be part of creating recovery goals.
- Factors to consider in establishing recovery goals at the Major Population Group (MPG) level:
    - Population size and recolonization (straying);
    - Two broad habitat classes (Puget lowlands and Cascade mountains); and
    - Additional criteria that other TRTs have used, such as: current status, biological feasibility, political/social/economic feasibility, hatchery practices, monitoring history, and presence of multiple species.
- Overall, the Team agreed to the idea of having goals at the DPS and MPG levels for spatial structure and diversity, and goals at the DIP level for abundance and productivity.
- To establish abundance and productivity recovery goals, the Team concluded using the life cycle model to develop specific targets or goal ranges for each population. Using a range instead of a specific target will allow for options for strategies and capture uncertainty within the model.
- The Team agreed to reach out to biologists and policy-makers all around the Sound in the process of developing recovery goals. A Team member suggested that the tribes already have a sense of what the goals should be, and it would be helpful for everyone if the Team shared a schedule of when and how to participate in developing the recovery goals.
- Joe Anderson, Ken Currens, and Elizabeth Babcock agreed to work offline before the next Team meeting to further update the approach for developing recovery goals.

Prep for MPG Workshops – The life cycle modelers set up three workshops in early February, one in each MPG, to reach out to the same watershed biologists who attended similar workshops in spring 2015. The focus of these workshops will be to share updates on the life cycle model and understand from the local and tribal biologists how they would like to participate in 2016. The Team noted the importance of asking local and tribal biologists for help with distribution data, not only current but historic distribution. In general, the modelers are hoping that the participants will be willing to share any data they have, which will only strengthen the model.

2016 Workplan – Due to lack of time at this meeting, the Team agreed to spend time on this at their next meeting. The Team was asked to review the draft sent with the meeting materials and send any thoughts to Claire Chase in advance of the next meeting.

Workgroup Progress Reports – Amilee Wilson and Tristan Peter-Contesse are working together to address planning geographies for some of the steelhead/Chinook management units, and are working with the local experts about how to address the geography individually.

Draft Recovery Plan – The Team was encouraged to read through the latest draft in advance of the next meeting, when more time will be spent on the newest information and format.

Public Comment – There was no public comment at this meeting.

Administrative Updates – The next meeting will be Tuesday, March 15, from 9am – 2pm. The Team suggested looking at a location north of Seattle; the location will be sent later. The next meeting will have time to discuss the draft Recovery Plan, recovery goals, the 2016 work plan, and the linkage library.

The meeting was adjourned at 2:00pm.

Participants:

Participant	Affiliation
Joe Anderson	Washington Department of Fish & Wildlife
Elizabeth Babcock	NOAA's National Marine Fisheries Service
Ed Connor	Seattle City Light
Ned Currence	Nooksack Tribe
Ken Currens	Northwest Indian Fisheries Commission
Jeanette Dorner	Puget Sound Partnership
Jeff Hard	Northwest Fisheries Science Center
Neala Kendall	Washington Department of Fish & Wildlife
Mike LeMoine	Upper Skagit Indian Tribes
Mike Lisitza	National Marine Fisheries Service
Susan O'Neil	Long Live the Kings
Scott Powell	Seattle City Light
Tristan Peter-Contesse	Puget Sound Partnership
David Price	Washington Department of Fish & Wildlife
Phil Sandstrom	Washington Department of Fish & Wildlife
Amilee Wilson	National Marine Fisheries Service
Bob Wheeler	Triangle Associates
Claire Chase	Triangle Associates